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?b ftcore,cryfull
 28Jul00 13:35:50 User243016 Session D75.2
    $0.03 0.006 DialUnits File15
$0.03 Estimated cost File15
    $0.03 0.006 DialUnits File9
$0.03 Estimated cost File9
    $0.03 0.006 DialUnits File623
$0.03 Estimated cost File623
    $0.01 0.006 DialUnits File810
$0.01 Estimated cost File810
    $0.03 0.006 DialUnits File275
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    $0.01 0.006 DialUnits File813
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    $0.03 0.006 DialUnits File636
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    $0.03 0.006 DialUnits File16
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$0.03 Estimated cost File348
    $0.03 0.006 DialUnits File349
$0.03 Estimated cost File349
    $0.01 0.006 DialUnits File634
$0.01 Estimated cost File634
OneSearch, 16 files, 0.095 DialUnits FileOS
$0.01 TYMNET
$0.41 Estimated cost this search
$0.43 Estimated total session cost 0.318 DialUnits
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SYSTEM:OS - DIALOG OneSearch
File 15:ABI/Inform(R) 1971-2000/Jul 27
(c) 2000 Bell & Howell
File 9:Business & Industry(R) Jul/1994-2000/Jul 28
(c) 2000 Resp. DB Svcs.
File 623:Business Week 1985-2000/Jul W4
(c) 2000 The McGraw-Hill Companies Inc
File 810:Business Wire 1986-1999/Feb 28
(c) 1999 Business Wire
File 275:Gale Group Computer DB(TM) 1983-2000/Jul 28
(c) 2000 The Gale Group
File 624:McGraw-Hill Publications 1985-2000/Jul 27
(c) 2000 McGraw-Hill Co. Inc
File 813:PR Newswire 1987-1999/Apr 30
(c) 1999 PR Newswire Association Inc
File 636:Gale Group Newsletter DB(TM) 1987-2000/Jul 28
(c) 2000 The Gale Group
File 621:Gale Group New Prod.Annou.(R) 1985-2000/Jul 28
(c) 2000 The Gale Group
File 16:Gale Group PROMT(R) 1990-2000/Jul 28
(c) 2000 The Gale Group
File 160:Gale Group PROMT(R) 1972-1989
(c) 1999 The Gale Group
File 148:Gale Group Trade & Industry DB 1976-2000/Jul 28
(c)2000 The Gale Group
File 20:World Reporter 1997-2000/Jul 28
(c) 2000 The Dialog Corporation plc
File 348:European Patents 1978-2000/Jul W01

(c) 2000 European Patent Office
*File 348: Update 200026 was withdrawn July 26 due to data problems.
Corrected data will be online sometime in the next few days.
File 349:PCT Fulltext 1983-2000/UB=, UT=20000713
(c) 2000 WIPO/MicroPatent
File 634:San Jose Mercury Jun 1985-2000/Jul 26
(c) 2000 San Jose Mercury News
File 98:General Sci Abs/Full-Text 1984-2000/Jun
(c) 2000 The HW Wilson Co.
File 239:Mathsci 1940-2000/Sep
(c) 2000 American Mathematical Society
File 647:CMP Computer Fulltext 1988-2000/Jul W2
(c) 2000 CMP
File 674:Computer News Fulltext 1989-2000/Jun W1
(c) 2000 IDG Communications

Set	Items	Description
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?s	(electronic? or digital) (2w) (cash or money) or (e()cash)	
4700414	ELECTRONIC?	
2046793	DIGITAL	
2471271	CASH	
2725916	MONEY	
19940	(ELECTRONIC? OR DIGITAL) (2W) (CASH OR MONEY)	
4985888	E	
2471271	CASH	
3475	E(W)CASH	
S1	22072	(ELECTRONIC? OR DIGITAL) (2W) (CASH OR MONEY) OR (E()CASH)
?s	(transact? or buy? or sell? or purchas?) (2n) (history or log? or file)	
1935652	TRANSACT?	
4134891	BUY?	
4608352	SELL?	
4152590	PURCHAS?	
1700035	HISTORY	
2104331	LOG?	
1301857	FILE	
S2	44581	(TRANSACT? OR BUY? OR SELL? OR PURCHAS?) (2N) (HISTORY OR LOG? OR FILE)

?s s1(s)s2
 22072 S1
 44581 S2
S3 48 S1(S)S2
?s s3 not py>1995
 48 S3
 23810987 PY>1995
S5 12 S3 NOT PY>1995

?rd
S6 10 RD (unique items) REVIEWED HITS
6/3,K/9 (Item 1 from file: 349)
DIALOG(R)File 349:PCT Fulltext
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00399179
TRUSTED AGENTS FOR OPEN ELECTRONIC COMMERCE
AGENTS VALIDES POUR COMMERCE ELECTRONIQUE OUVERT

Patent Applicant/Assignee:
CITIBANK NA

Inventor(s):
ROSEN Sholom S

Patent and Priority Information (Country, Number, Date):

Patent: WO 9530211 A1 19951109
Application: WO 95US3831 19950328 (PCT/WO US9503831)
Priority Application: US 94234461 19940428

Designated States: AM; AT; AU; BB; BG; BR; BY; CA; CH; CN; CZ; DE; DK; EE;
ES; FI; GB; GE; HU; IS; JP; KE; KG; KP; LK; LR; LT; LU; LV; MD; MG; MN;
MW; MX; NL; NO; NZ; PL; PT; RO; RU; SD; SE; SG; SI; SK; TJ; TT; UZ; VN;
KE; MW; SD; SZ; UG; AT; BE; CH; DE; DK; ES; FR; GB; GR; IE; IT; LU; MC;
NL; PT; SE; BF; CG; CI; CM; GA; GN; ML; MR; NE; SN; TD; TG

Publication Language: English
Fulltext Word Count: 28653

Fulltext Availability:
Claims

Claim

... money module via said second cryptographically secure session; said first money module updating a first **transaction log** and informing said customer trusted agent of successful **electronic money transfer**; and said second money module updating a second **transaction log** and securely informing said merchant trusted agent of successful **electronic money receipt**.

31. The method of claim 25, wherein the steps of committing by said customer...

?t s6/9/1-4,6,8

6/9/1 (Item 1 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)
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00976750 96-26143

BSA reform: Cutting the regulatory burden

Byrne, John J

ABA Bank Compliance v16n1 PP: 46-48 Jan 1995 ISSN: 0887-0187

JRNL CODE: BCP

DOC TYPE: Journal article LANGUAGE: English LENGTH: 3 Pages

WORD COUNT: 1849

ABSTRACT: The Department of Treasury has announced several new policy and rule changes designed to help the banking industry comply with the myriad requirements under the Bank Secrecy Act. The major change in regulatory requirements was the rescission of the \$3,000 monetary instrument log that was mandated on May 15, 1990. This rule required financial institutions to verify and record identifying and other information from the purchaser of bank checks or drafts, cashier's checks, money orders, or traveler's checks for \$3,000 or more in currency. The Treasury also withdrew 2 pending regulations dealing with cash transaction reporting. The first proposal would have required financial institutions with deposits in excess of \$100 million to maintain systems to aggregate currency transactions that are conducted by on or on behalf of account holders and that affect an account during a business day. The 2nd proposal would have required financial institutions that file more than 1,000 currency transactions a year to file by magnetic media.

TEXT: On October 15, 1994, the Department of Treasury announced several new policy and rule changes designed to help the banking industry comply with the myriad requirements under the Bank Secrecy Act (BSA). Treasury Secretary Lloyd Bentsen described the actions as measures designed to "significantly reduce the burden on the financial community without compromising the needs of law enforcement."

Bentsen stressed that the changes were "developed cooperatively" with the Bank Secrecy Act Advisory Group, a forum of private and public sector representatives that is working to streamline the recordkeeping and reporting features of the Bank Secrecy Act.

The \$3,000 Log

The major change in regulatory requirements was the rescission of the \$3,000 monetary instrument log that was mandated on May 15, 1990. This rule required financial institutions to verify and record identifying and other information from the purchaser of bank checks or drafts, cashier's checks, money orders, or traveler's checks for \$3,000 or more in currency. The information had to be retained on a chronological log and located in a centralized place within the bank. Finally, the log had to be kept at the bank for five years.

The American Bankers Association (ABA) had long called for the elimination or substantial modification of the monetary instrument log rule. ABA opposed the initial statutory change to the Bank Secrecy Act (31 USC 5325) as unnecessary and argued against retention of the log requirements in a 1992 letter to the Department of Treasury. The association also advocated a change in the log requirement that would differentiate between accountholders and non-accountholders, and that is what the Treasury has decided to do.

Effective October 17, 1994, a deposit accountholder's financial institution--when issuing or selling a bank check or draft, cashier's check, money order, or traveler's check for \$3,000 or more in currency--needs to obtain and maintain records of-

- * the name of the purchaser;
- * the date of the purchase; and
- * the type(s), serial number, and the amount in dollars of each of the instruments purchased.

The new rule also requires the financial institution to verify that the purchaser is a deposit accountholder and has been identified previously, or verify his or her identity, and record the method of verification. What is important for banks to remember is that the new rule eliminates the requirement to log the purchaser's account number, the branch where the purchase occurred, and the requirement to note on the log whether the transaction is part of a multiple sale.

Treasury's policy change separately addresses the requirements for recordkeeping on monetary instrument sales to non-accountholders. Financial institution officials should remember that several banks stopped selling those instruments to non-accountholders so as not to have to retain the monetary log information (even though the bank examiners still required that a log for non-accountholders be maintained). The new rule requires the following information on persons who do not have deposit accounts with the bank:

- * the name, address, social security or alien ID number, and date of birth of the purchaser; and
- * the type(s), serial number, and the amount in dollars of each of the instruments purchased.

The bank must also verify the purchaser's identity and record the method of verification and specific identifying information (for example, state of issuance and number of driver's license). All records must be accessible within a "reasonable period" of time but can be kept in any format. The Treasury Department believes that the eliminated log information "is available generally in account or other records, or on the originals or on copies of the monetary instruments."

For those of you keeping score on the non-accountholder rule, the Treasury has eliminated the requirement to obtain and record information regarding the person(s) "on whose behalf" the instrument is being purchased, the branch where the purchase occurred, payee(s) on each cashier's check and bank check and draft purchased, and the amount of the purchase in currency. Also, the requirement to note whether a transaction is part of a multiple sale is eliminated, but a bank must still treat as a single purchase any multiple sales to an individual of which the institution has knowledge.

Some have suggested that this new rule will save the financial institution industry over \$1 million a year.

Withdrawal of Mandatory Aggregation/Filing Proposals

On the same date as the \$3,000 log rule change was published, the Treasury Department withdrew two pending regulations dealing with cash transaction reporting. Both proposals were first published on September 6, 1990.

The first proposal would have required financial institutions with deposits in excess of \$100 million to maintain systems to aggregate currency transactions that are conducted by or on behalf of accountholders and that affect an account during a "business" day. The regulation would have also required currency dealers and exchangers, check cashers, and transmitters of funds to maintain systems and procedures to aggregate currency transactions that are conducted by or on behalf of customers at the financial institution during a business day.

The second proposal would have required financial institutions that file more than 1,000 currency transaction reports (CTRs) a year to file by magnetic media.

Because many institutions put systems in place to aggregate and electronically file cash transactions despite the lack of a final rule, the Treasury Department weighed this fact when considering whether to promulgate a final regulation. The agency also noted that now over 70 percent of all CTRs are multiple-transaction CTRs (thus proving that banks were aggregating transactions) and that the number of banks that filed electronically had skyrocketed from 50 banks in 1989 to 532 in 1993. These facts, plus the potential costs to banks that had not already changed systems, made it clear to the Treasury that the pending proposals should be withdrawn.(1)

Future Burden Reductions

The Treasury Department also unveiled its new draft CTR, which is in the process of being substantially revamped. The current two-page form (IRS Form 4789) will be shortened to less than one full page and will, according to FINCEN Director Stan Morris, eliminate duplicative and unnecessary information by one-third. The form will be final sometime in 1995.

Another area of potential regulatory burden reduction concerns a requirement passed in the 1992 Annunzio-Wylie Anti-Money Laundering Act (P.L. 102-550). That law required banks to identify their customers that are nonbank financial institutions (NBFIs). This mandate, set to start on January 1, 1994, was delayed because of the inability of the Treasury to fairly define NBFIs.

In addition, the passage of the Money Laundering Suppression Act of 1994 (P.L. 103-325) now requires the registration of money transmitters. FINCEN Director Stan Morris, at a recent Money Laundering Enforcement Seminar cosponsored by the American Bankers Association and American Bar Association, raised the question of whether the 1992 provision on identification is "still necessary."

In testimony before the House Banking Committee in 1993, the American Bankers Association advocated elimination of this requirement, stating, "It is distressing that once again the banking industry is being asked to provide information to law enforcement which could be and should be derived from other sources." Treasury appears willing to seriously address that concern, a stance that is in keeping with its recent track record of streamlining and improving the BSA.

As we enter into 1995, financial institutions should continue to be optimistic that the Clinton administration will further improve the recordkeeping and reporting structure of the BSA. Stan Morris outlined this and other Treasury Department initiatives at the previously mentioned ABA-ABA seminar.

Treasury's Anti-Money Laundering Strategy

Morris also told an audience of bankers and lawyers that the Treasury Department must seek assistance from the banking industry; otherwise they "cannot succeed in fighting money laundering in a professional world that separates enforcement and regulation or the public and private sectors."

Morris agreed that it is "far more difficult than ever before to pass large amounts of cash" into the nation's banks because the industry itself has undergone "a revolution in attitudes and compliance." Morris then proceeded

to describe the new efforts on money laundering deterrence supported by the Treasury Department.

The Treasury Department is now hoping to build a money laundering detection system with features that include the following:

- * a redesigned exemption system that will cut currency transaction reporting from banks by at least one-third over a relatively short period;
- * enhanced and more effective reporting of suspicious transactions to a single recipient agency that is responsible for
 - distributing the information within the government,
 - analyzing it, and
- providing the resulting intelligence to law enforcement, bank regulators, and the industry.

The Director of FINCEN repeated the position of the Clinton administration when he said, "We'll listen to complaints about regulatory burden and ineffective programs...[b]ut we also want proactive help from the industry in shaping the structure that will catch criminals and cut down the attractiveness of American finance to money launderers."

Morris also highlighted the list of concerns that Treasury is considering while moving forward to streamline the current recordkeeping and reporting requirements. For example, although the Treasury will stress training and attempt to reduce uncertainty, the agency believes that there is a reciprocal duty on the part of each bank to "recognize and report developments that we [Treasury] haven't anticipated, based on the bank's knowledge of its customers and commerce."

The list of Treasury's questions or concerns included the issue of banks being overregulated and nonbanks being unregulated. Treasury would like to know how to extend the current system in a "meaningful" way to tens of thousands of small institutions that are not part of "any unified or regulated industry." Finally, Morris admitted that Treasury is questioning whether the agency has too much authority, especially in the area of nonbank financial institutions, as a result of the 1992 law that requires banks to identify their nonbank customers.

The seminar participants also learned that, according to FINCEN, the Treasury is preparing to finalize its wire transfer recordkeeping regulations within 120 days and complete the new cash transaction reporting form in early 1995.

Once again, Treasury is actively seeking input from our industry. Let's not waste this opportunity.

Note

1 In January 1991, the ABA wrote to then Treasury Secretary Nicholas Brady that "banks affected by the proposal will have a 'hard cost' of over \$285 million."

For more information on ABA Bank Compliance or to subscribe, call 1-800-338-0626.

John J. Byrne is Senior Federal Legislative Counsel in the Retail operations and Risk Management section of the American Bankers Association's Government Relations Division. He is responsible for ABA's lobbying and educational efforts on white-collar crime, environmental liability, and other general banking issues in the House and Senate.

Prior to taking this position, Mr Byrne was an Assistant General Counsel in the ABA's Office of the General Counsel. He received his undergraduate degree from Marquette University in Milwaukee, Wisconsin, and his J.D. from George Mason University in Arlington, Virginia. He is a member of the District of Columbia and Pennsylvania bars.

Mr. Byrne has been a frequent lecturer on money laundering, the Bank Secrecy Act, and bank fraud, and has represented the association on these issues in the media as well as before Congress and the state legislatures.

THIS IS THE FULL-TEXT. Copyright American Bankers Association 1995
GEOGRAPHIC NAMES: US

DESCRIPTORS: Regulatory reform; Bank compliance; Requirements;
Characteristics; Disclosure

CLASSIFICATION CODES: 8100 (CN=Financial services industry); 4310
(CN=Regulation); 9190 (CN=United States)

6/9/2 (Item 1 from file: 9)

DIALOG(R)File 9:Business & Industry(R)
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01349032

NTT Develops Electronic Cash System

(NTT Corp has completed a test version for an electronic cash system using cipher technology)

Nikkan Kogyo Shimbun, p 10

December 02, 1995

DOCUMENT TYPE: Business Newspaper (Japan)

LANGUAGE: Japanese RECORD TYPE: Abstract

ABSTRACT:

NTT Corp. has completed a test version for an electronic cash system using cipher technology. When a customer buys something, he or she uses a handheld PC to transmit funds electronically to the store. The store asks the buyer a question and if the answer is correct, the store accepts the transaction. A purchase record and the amount of the transaction are logged and later sent to a bank. The bank checks the information and, if accepted, funds are transferred to the store's account. Following system trials, NTT will conduct more research into the system to further improve functions and better respond to system irregularities.

COMPANY NAMES: NIPPON TELEGRAPH & TELEPHONE CORP

INDUSTRY NAMES: Information industry; Publishing; Telecom services;
Telecommunications

PRODUCT NAMES: Specialized telecommunications services (481397)

CONCEPT TERMS: All product and service information; Product development

GEOGRAPHIC NAMES: Japan (JPN); Pacific Rim (PARX); Southern & Eastern Asia (SSAX)

6/9/3 (Item 1 from file: 275)

DIALOG(R)File 275:Gale Group Computer DB(TM)
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01517098 SUPPLIER NUMBER: 12236212 (THIS IS THE FULL TEXT)

National Data brings its Tandem-based CMX2000 banking system to the UK.
(Product Announcement)

Computergram International, CGI06050014

June 5, 1992

DOCUMENT TYPE: Product Announcement ISSN: 0268-716X LANGUAGE:

ENGLISH RECORD TYPE: FULLTEXT

WORD COUNT: 388 LINE COUNT: 00033

TEXT:

+ NATIONAL DATA BRINGS ITS TANDEM-BASED
CMX2000 BANKING SYSTEMM TO THE UK

A new integrated approach to corporate electronic banking, the CMX2000, has been launched by Atlanta, Georgia-based National Data Corp Inc in association with Tandem Computers Inc. National Data hopes to corner a niche in the banking market by offering an in-bank system, hardware and worldwide networking in one package. A cash management system, it is aimed

at both large international banks and medium sized second tier banks in Europe, that is those banks wanting to provide time-critical services to between five and 500 corporate customers. CMX2000 consists of several elements: the Networks for Electronic Transaction Services 2000 - NETS2000 - an in-bank services system providing electronic distributed cash management information processing on a global level, enabling banks to deliver services direct to corporate clients at a lower cost while providing the bank with central control over administration, customer support services and security controls; it can also be adapted to suit the bank's image and information can be translated into the most suitable language for the bank's clients; the personal computer NETS - in the form of customer site software that provides a "modern" interface to the banks services; the Tandem NonStop CLX/R EISC-based fault-tolerant computer, and finally automatic membership of the Cash Management Exchange - CMX - a worldwide association of 140 banks, providing international and domestic multibank balance reporting, the transmission of money transfer instructions and delivery of electronic mail to CMX member banks. The CMX2000 system can offer 25 concurrent users a five second response time and enables customers to build payment files and deliver them in a secure format to the bank with all transactions time-logged. The package is available on the market now starting at \$125,000, but an upgraded version, Global Exchange, will be available from September and will include Electronic Data Interchange support. National Data Corp, an independent provider of specialised business communication and information processing services with a turnover of \$229m, believes itself adequately placed to corner this market as competitors so far can offer only communications between personal computers without a middle-man system. It claims that this limits user numbers to a maximum of 50, and that it makes them vulnerable to local faults.

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COMPANY NAMES: National Data Corp.--Product introduction

DESCRIPTORS: Product Introduction; Vertical Market Software; Banking;
Computer systems

SIC CODES: 7374 Data processing and preparation; 6000 DEPOSITORY
INSTITUTIONS; 3571 Electronic computers

TRADE NAMES: National Data CMX2000 (Computer system)--Product
introduction

FILE SEGMENT: CD File 275

6/9/4 (Item 1 from file: 636)

DIALOG(R)File 636:Gale Group Newsletter DB(TM)
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02476929 Supplier Number: 44966444 (THIS IS THE FULLTEXT)

New Markets Canada's Post Corp. Delivers Cards as a New Payment Option

Credit Card News, pN/A

Sept 1, 1994

Language: English Record Type: Fulltext

Document Type: Newsletter; Trade

Word Count: 400

TEXT:

The U.S. Postal Service is not the only mail courier planning to take cards (CCN, July 15). Its counterpart north of the border is about to roll out card acceptance. The government's Canada Post Corp. in July started taking credit cards in 13 of its 4,200 corporate-owned locations and plans to take cards at all post offices in two years. The Post Corp.'s 3,700 franchise offices at outside merchants, such as drug stores, have taken cards for eight years, but the test represents the first time that corporate-owned locations will accept them, says Peter Smith, corporate manager for product and services development. The Ottawa-based Post Corp. decided to take cards because it wants to be perceived as competitive, meeting customer needs and trimming internal costs. "The public perception was that the postal service was still in the horse-and-buggy days," Smith says. When it comes to payment systems, the Post Corp. indeed isn't much beyond horse-and-buggy days. Even though the agency has \$4 billion (Canadian) in annual revenues, clerks do not have cash registers. Officials store cash and checks in

wooden drawers, log and tally transactions manually, and deposit funds into the banks two to three days later. One factor that persuaded the Post Corp. to take cards is the fact that it is switching to a cash-management system, which will allow it to authorize card transactions on electronic cash registers without having separate terminals. Smith doubts that card acceptance will cause patrons to buy significantly more stamps or other postal services. But he says cards could result in savings because funds can be monitored better. The new system will allow the agency to move funds electronically to its banks and settle accounts daily. Considerable Volume? The discount fees, which are below 2%, are Post Corp.'s only direct expenses. The Post Corp. expects to pay discount fees out of the increased savings. Since Canada does not have duality, even in merchant acquiring, the agency has two acquirers--Toronto-based Canadian Imperial Bank of Commerce for Visa transactions and Canada Trust for MasterCard transactions. The banks will pay for the telephone line charges and installation costs. Post Corp. will be the largest government entity to take cards in terms of locations, says Gerald Serratore, Canada Trust manager of merchant sales. "Once all the outlets are set up, we could see considerable volume," he says.

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Subscription: \$345 per year as of 1/97. Published biweekly. Contact Faulkner & Gray, Inc., 11 Penn Plaza, 17th Floor, New York, NY 10001. Phone 212-967-7000. Fax 212-967-7155.

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PUBLISHER NAME: Faulkner & Gray, Inc.

INDUSTRY NAMES: BANK (Banking, Finance and Accounting); BUSN (Any type of business)

6/9/6 (Item 1 from file: 160)

DIALOG(R)File 160:Gale Group PROMT(R)

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02046272

TRAN INFORMATIQUE

News Release September 20, 1988 p. 1

Tran Informatique introduces at COMDEX its COMCASH, a compact, ergonomic and IBM-PC compatible universal commercial system. Seen as the cash register-computer of the future, COMCASH offers a smart electronic cash till, an IBM-PC or AT compatible computer fitted with a fast mass storage media, 30 Megabyte hard disc capacity, and a 3 1/2 inch floppy disk drive. It also works as an electronic payment terminal (EPT), opening access to credit or payment card transactions by logging sessions to credit card processing mainframes, and as a specific or private smart card handling system that takes MIX bank cards with magnetic track or IC.

Full text available on PTS New Product Announcements.

COMPANY:

*Tran Informatique

PRODUCT: *Microcomputers (3573115); Point-of-Sale Terminals (3573283);
Electronic Cash Registers (3574530)

EVENT: *Product Design & Development (33)

COUNTRY: *France (4FRA)

6/9/8 (Item 1 from file: 348)

DIALOG(R)File 348:European Patents

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00168740

ORDER fax of complete patent from Dialog SourceOne. See HELP ORDER 348
Electronic cash register system incorporating local goods data storage.

Registrierkassensystem enthaltend einen Datenspeicher fur Ortsguter.

Système de caisse enregistreuse incorporant une memoire de donnees de produits locaux.

PATENT ASSIGNEE:

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LEGAL REPRESENTATIVE:

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2, W-8000 Munchen 90, (DE)

PATENT (CC, No, Kind, Date): EP 176072 A2 860402 (Basic)
EP 176072 A3 870812
EP 176072 B1 910814

APPLICATION (CC, No, Date): EP 85112049 850924;

PRIORITY (CC, No, Date): JP 84200049 840925

DESIGNATED STATES: AT; BE; CH; DE; FR; GB; IT; LI; LU; NL; SE

INTERNATIONAL PATENT CLASS: G06F-015/22; G07G-001/00;

CITED REFERENCES (EP A):

IBM TECHNICAL DISCLOSURE BULLETIN, vol. 24, no. 2, July 1981, pages
976-978, New York, US; M.E. CHAMOFF et al.: "Dynamic self-optimizing
price lookup for retail terminal system"

PATENT ABSTRACTS OF JAPAN, vol. 6, no. 195 (P-146) 1073 , 5th October
1982; & JP-A-57 105 076 (TOKYO DENKI K.K.) 30-06-1982

PATENT ABSTRACTS OF JAPAN, vol. 7, no. 30 (P-173) 1175 , 5th February
1983; & JP-A-57 182 868 (TATEISHI DENKI K.K.) 10-11-1982;

ABSTRACT EP 176072 A2

Electronic cash register system incorporating local goods data storage.

This electronic cash register system includes a means for storing a master file having reference data for the entirety of a set of items of goods, a transfer means, and a plurality of electronic cash registers. Each of the registers includes a means for storing a sub file having reference data for a subset of the set of items of goods, and a means for consulting the sub file for reference data for a particular item of goods which is to be dealt with and for, if and only if the sub file does not hold the reference data, obtaining the reference data from the master file via the transfer means. The system further includes a means for, according to data of goods dealt with, determining a subset of the set of items of goods the members of which are often dealt with, and a means for updating the sub files kept at the electronic cash registers according to the thus determined subset. Thereby the dealing with items of goods can mostly be accomplished locally. Accordingly, this system can increase the speed of transaction processing, and the capacity of each local sub file storage means can be much smaller than the capacity of the master file storing means. If the master file has become inoperative, effective transaction processing can still be provided for most transactions. And, since the sub files are updated by the updating means, the data therein may be kept current.

ABSTRACT WORD COUNT: 254

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application: 860402 A2 Published application (A1with Search Report
;A2without Search Report)

Examination: 860402 A2 Date of filing of request for examination:
850924

Change: 870701 A2 Obligatory supplementary classification
(change)

Search Report: 870812 A3 Separate publication of the European or
International search report

Examination: 890104 A2 Date of despatch of first examination report:
881121

Grant: 910814 B1 Granted patent

Oppn None: 920805 B1 No opposition filed

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	EPBBF1	356

CLAIMS B	(German)	EPBBF1	292
CLAIMS B	(French)	EPBBF1	365
SPEC B	(English)	EPBBF1	3171
Total word count - document A			0
Total word count - document B			4184
Total word count - documents A + B			4184

SPECIFICATION EP 176072 B1

The present invention relates to the field of electronic cash register systems, and in particular relates to such an electronic cash register system in which some of the data relating to goods which are to be sold is available locally at each cash register.

There is a per se known type of electronic cash register system, for registering the sales of various types of goods at various different outlets, in which a plurality of electronic cash registers are linked together by a transfer line system. In such a system, it is per se known for a so called price look up system to be adopted, in which either a master one of the electronic cash registers or a host computer stores and maintains a master file which contains information on all the various types of goods which are to be sold using the system. In such a system, when a transaction such as the sale of an item of goods is to be performed by one of the electronic cash registers, said electronic cash register sends a message by way of the transfer line system to the master electronic cash register or host computer requesting data relating that item of goods, such as its unit price. This causes the master electronic cash register or host computer to forward that information to the transacting electronic cash register, again by way of the transfer line system. And then the transacting electronic cash register is enabled to process the transaction.

This prior art system is structured in this way because an information storage means for storing such a master file which contains information on all the various types of goods which are to be sold using the system is required to have a considerably large capacity, and accordingly is quite high in cost as well as being possibly large in physical size. Therefore, it is not considered to be efficient to store such a master file at each of the individual electronic cash registers, and, in order to reduce the unit price of the electronic cash registers, a single master file is maintained on the master electronic cash register or host computer, thus avoiding duplication of storage.

However, according to such a conventional type of multiple electronic cash register system, since each of the electronic cash registers accesses the master file on the master electronic cash register or host computer by way of the transfer line system each time the sale of any item of goods is required to be performed by any of the electronic cash registers, to receive price and other data regarding such item of goods, a considerable flow volume of data is required to be transferred by the transfer line system and to be retrieved from the master file, and this can cause undue slowdown in speed of operation. Especially this is the case if the transfer line system for transferring information between the master file serving means and the individual electronic cash registers is of relatively low transmission capability, which may be desirable from the point of view of cost of the system.

Another problem that has arisen in such a conventional type of multiple electronic cash register system has related to failure thereof. It is inevitable that at some time such a master file should become unusable, either for a relatively short time as because of breakdown of the master electronic cash register or host computer, or for a relatively long time as because of failure of the file storage media itself. In the case of such an event, the attendant at each of the electronic cash registers is required to enter on the keyboard of his or her electronic cash register all the data such as price data and other data for each item of goods which is sold, and not only is the speed of operation drastically reduced but also the entire processing of transactions may become unmanageable.

An electronic cash register system according to the preamble of claim 1 is known from IBM Technical Disclosure Bulletin, volume 24, No. 2, July 1981, pages 976-978, New York, US. According to this known electronic cash register system, the sub file is updated by reshuffling the

merchandise item data is in a table in which they are stored. Whenever a data associated with a merchandise item is entered through the keyboard of the electronic cash register this data is looked for in the table, extracted where found and reinserted at the top of the table. A data not found in the table forming the sub file is looked up in the master file and transferred to the sub file where it is inserted at the top of the table after the table has been "pushed down" by eliminating the data which was at that time at the bottom of the table. By this, always the data of a merchandise item which was requested farthest in the past is eliminated.

The invention is claimed as in claim 1.

According to such a structure, the determining means may usefully employ this information about totals relating to goods dealt with, which has been compiled by the individual electronic cash registers, without having to compile said information itself. This represents an economy of operation.

The present invention will now be shown and described with reference to the preferred embodiment thereof, and with reference to the illustrative drawings. It should be clearly understood, however, that the description of the embodiment, and the drawings, are all of them given purely for the purposes of explanation and exemplification only, and are none of them intended to be limitative of the scope of the present invention in any way, since the scope of the present invention is to be defined solely by the legitimate and proper scope of the appended claims. In the drawings, like parts and spaces and so on are denoted by like reference symbols in the various figures thereof; in the description, spatial terms are to be everywhere understood in terms of the relevant figure; and:

Fig. 1 is a schematic block diagram showing the preferred embodiment of the electronic cash register system of the present invention, which includes one master and several slave electronic cash registers;

Fig. 2 is a schematic block diagram showing the construction of a typical one of the slave electronic cash registers incorporated in the Fig. 1 system;

Fig. 3 shows in a diagrammatical front view a keyboard of each of the electronic cash registers;

Fig. 4 schematically shows in its subfigure 4(A) a part of the contents of a random access memory of the master electronic cash register and in its subfigure 4(B) a part of the contents of a random access memory of one of the slave electronic cash registers; and

Fig. 5 is a schematic informal flow chart showing the overall action of the system according to the present invention.

The present invention will now be described with reference to the preferred embodiment thereof, and with reference to the appended drawings. Fig. 1 shows in a very schematic block diagram form said preferred embodiment of the electronic cash register system of the present invention. This electronic cash register system comprises a plurality of electronic cash registers, referred to in the figures as #1, #2, #3, #n, which are mutually interconnected by a transfer line L. Further, in this preferred embodiment, the electronic cash register #1, which will hereinafter be referred to as the master electronic cash register, performs overall control of the electronic cash register system as a whole. In other words, the master electronic cash register #1 not only performs the processing of normal transactions in the same way as do the other electronic cash registers #2, #3, #n (which hereinafter will be referred to as slave electronic cash registers), but also has the additional function of performing the overall management of the data on sold goods for the overall system, as will be explained in detail later. In an alternative form of such an electronic cash register system, a host computer may be installed, but according to this shown preferred embodiment a system which is solely comprised of a plurality of master and slave electronic cash registers as shown in the drawing is considered.

Fig. 2 shows in schematic block diagrammatical form the construction of a typical one of the slave electronic cash registers #2, #3, #n. This slave electronic cash register comprises a microcomputer 1 as its central element and a keyboard 2 for serving as an input means for said microcomputer 1, and further comprises as output means a display 3 for indicating data visually to the operator and/or the customer and a

printer 4 for printing receipts and the like. There is also provided a transfer device 5 which interfaces between the microcomputer 1 and the transfer line L, and a random access memory unit (RAM) 6 which stores data on goods which are to be sold in the form of files, as will be particularly described hereinafter. And the structure of the master electronic cash register #1 is substantially the same as that shown in Fig. 2, except that the capacity of the RAM 6 is much larger, for storing more data as will be explained later; alternatively, a backup storage means such as a disk storage device or the like may be provided for said master electronic cash register #1.

As shown in diagrammatical front view in Fig. 3, the keyboard 2 of each of the electronic cash registers comprises a ten key pad 31, a set 32 of classification keys, a set of function keys 33, and a key switch 34 for mode switch over. As will be understood from the designations in Fig. 3 of these keys, when an item of goods is to be sold by the operator of this slave electronic cash register (i.e., one of the electronic cash registers #2, #3, #n), upon performing price look up operation on the function keys 33, key operation of the classification keys 32, and goods code input operation on the ten key pad 31, the local RAM 6 of this slave electronic cash register is consulted for relevant data. If this data is available in said local RAM 6 of this slave electronic cash register, then it is retrieved; but, if the local RAM 6 of this slave electronic cash register does not contain such data, then the microcomputer 1 sends a signal out via the transfer device 5 and the transfer line L to order this data from the exhaustive data file available on the master electronic cash register #1, and, waits until said data is received. Then, in either case, when the data becomes available, the price of the item of goods is displayed on the display 3, and also a receipt entry is issued from the printer 4. Thereby, so called price look up processing is performed.

Now this operation according to the principle of the present invention will be explained in more detail. In Fig. 4 there are schematically shown in its subfigure 4(A) a part of the contents of the RAM 6 of the master electronic cash register #1 and in its subfigure 4(B) a part of the contents of one of the slave electronic cash registers #2, #3, #n; in this discussion, for the purposes of simplicity of explanation, it will be assumed that the relevant contents of the RAMs 6 of the various slave electronic cash registers #2, #3, #n are identical, but in fact this is not necessarily the case.

The part of the contents of the RAM 6 of the master electronic cash register #1 shown in Fig. 4(A) constitutes master files 41 for each of the classifications (DP), while the part of the contents of the RAMs 6 of the slave electronic cash registers #2, #3, #n shown in Fig. 4(B) constitutes a sub file 42 for each of the classifications (DP). Each of the master files 41 and the sub files 42 incorporates a goods data box a and a total box b; the total box of the master file 41 is designated as b1, and the total box of the sub files 42 is designated as b2. The goods data box a lists the goods code of a type of goods and the unit price and so on for each of the classifications (DP), and the total boxes b1 and b2 each have a cash total box and a units total box. The total box b1 of the master file 41 stores long term totals, for instance the totals over a period of one month or over a period corresponding to a certain season. On the other hand, the total boxes b2 of the sub files 42 contain short term totals, for instance the totals for the current day. In this preferred embodiment, for simplification of illustration, the contents of the sub file 42 of each of the slave electronic cash registers are supposed to be identical, and the total box b1 of the master file 41 simply holds totals for each of the goods without classifying them for each of the slave electronic cash registers.

Fig. 5 is a schematic flow chart showing the action of the overall system, and is referred to in the following description. It should be understood that this flow chart is only an informal one for aiding the understanding of the system according to the present invention, and does not actually represent the operation of any of the individual microcomputers in the electronic cash registers #1, #2, #3, #n.

In the Fig. 5 flow chart, the steps 501 and 502 are initial processing steps for the master electronic cash register #1, and this initial processing involves forming of the master file 41 in the RAM 6 of said

master electronic cash register #1 (in the step 501), extracting the data relevant to a certain number, for instance 2000, of the best selling goods for the section where each of the electronic cash registers is installed, and storing this data in a certain area of the RAM 6 of each of the slave electronic cash registers #2, #3, #n as sub file data 42 by extracting this data from said master file of the RAM 6 of said master electronic cash register #1 (in the step 502). This system initial processing is performed, for instance, when the system is started up.

At each of the slave electronic cash registers #2, #3, ... #n, since the data for the sub file 42 therein is transferred from the RAM 6 of the master electronic cash register #1 to the RAM 6 of said slave electronic cash register by way of the transfer line L in the step 503, the routines in the step 504 to the step 508 are performed as the processing for everyday transactions.

In other words, a key entry is made on the keyboard 2 in the step 504, the sub file 42 of this slave electronic cash register is looked up, and it is determined in the step 505 whether the entered goods code is available in this own sub file 42 or not.

If the sub file 42 of this slave electronic cash register has the goods code, it is looked up, and if not the master file 41 of the master electronic cash register #1 is looked up by way of the transfer line L in the step 507, and then not only the unit price and the total price of the goods is displayed on the display 3 but also an appropriate receipt is issued from the printer 4, and then the totalling processing of the step 506 is performed.

The totalling processing of the step 506 consists of adding the price and the quantity to the total box b2 of the sub file 42 if the type of goods is one whose code was available in said sub file 42 of this slave electronic cash register, and on the other hand in creating a sub file for this type of goods if the data on the goods was required to be obtained by looking up the master file 41 in the step 507.

When the day's business is completed, the total data which has been totalled up in the step 506 as described above is transferred to the master file in the master electronic cash register #1 all together, in the step 508.

In the master electronic cash register #1, the total data which is transferred from each of the slave electronic cash registers #2, #3, #n every day is entered into the total box b1 of the master file 41 each time in a cumulative manner, and when for instance the total data for one month have been obtained, in the step 509, the best selling goods are determined by statistical techniques, for instance according to the order of sales volume or the order of the increase rate in sales volume, in the step 510.

Then, in the step 511, a group of goods, for instance the top 2000 best selling goods, is extracted from the master file 41 as data for the sub files, and by comparing these data for the sub files with the contents of the sub files 42 of the slave electronic cash registers #2, #3, ... #n, disagreeing data on the goods are obtained, so that they may be transferred to the corresponding sub files 42 of the corresponding slave electronic cash registers, in the step 503 when it is next performed.

Thereafter, the steps 503 to 511 are repeated, and each of the sub files 42 of the electronic cash registers is updated, for instance once every month or once every season.

Thus, since the price look up processing which is performed in the processing of normal everyday transactions at each of the electronic cash registers can be performed mostly by looking up its own sub file, locally, and the need for looking up the master file 41 by way of the transfer line L is minimized, in addition to the advantage of gradually increasing the accuracy of the group of well selling goods stored in the sub files 42, the processing of transactions at each of the electronic cash registers can be performed in a very efficient manner.

Furthermore, according to this preferred embodiment of the present invention, since the sub file data for each of the electronic cash registers is prepared for instance at the start up of the system, the improvement of the processing speed may be achieved from the beginning of the operation of the system.

Although in the above described preferred embodiment the sub file data is prepared in advance as part of the system initial processing, this

invention is not to be considered as limited thereby, but it is also possible to prepare the data for the sub files during the initial period of the system start up from the results of looking up the master file for each transaction at each of the electronic cash registers for a certain number of goods, and renewing the sub file according to the subsequent determination of well selling goods.

Also, in the above described embodiment the determination of the best selling goods is performed by the master electronic cash register, but it is also possible for each individual electronic cash register to do the determination. And, in an electronic cash register system using a host computer, it is possible to provide the master file in the host computer, and to perform the determination of best selling goods and creation of data for the sub files on the part of the host computer, as a matter of course.

CLAIMS EP 176072 B1

1. An electronic cash register system, for dealing with a set of items of goods, comprising:
 - (a) a means for storing a master file (41) having reference data for the entirety of said set of items of goods;
 - (b) a transfer means (5);
 - (c) a plurality of electronic cash registers (ECR2, ECR3, ...), each comprising:
 - (c1) a means (6) for storing a sub file (42) having reference data for a subset of said set of items of goods; and:
 - (c2) a means for consulting said sub file (42) for reference data for a particular item of goods which is to be dealt with and for, if and only if said sub file does not hold said reference data, obtaining said reference data from said master file (41) via said transfer means (5);
 - (d) a means (510) for, according to data of goods dealt with, determining a subset of said set of items of goods the members of which are often dealt with; and
 - (e) a means (511) for updating said sub files (42) kept at said electronic cash registers (ECR2, ECR3, ...) according to said subset of said set of items of goods determined by said determining means, characterized in that each of said plurality of electronic cash registers (ECR2, ECR3, ...) further comprises a means (506) for maintaining a total relating to goods dealt with and a means for forwarding said totals maintained by said electronic cash registers (ECR2, ECR3, ...) to said determining means (510), the determination of said subset being made on the basis of the magnitude of the totals thus maintained.
2. An electronic cash register system according to claim 1, wherein said totals maintained by said electronic cash registers (ECR2, ECR3, ...) are totals of numbers of dealt with goods.
3. An electronic cash register system according to claim 1, wherein said dealing with goods consists essentially in selling said goods, and wherein said totals maintained by said electronic cash registers (ECR2, ECR3, ...) are totals of prices of sold goods.
4. An electronic cash register system according to anyone of the preceding claims, wherein said sub files (42) kept at said electronic cash registers (ECR2, ECR3, ...) all relate to the same subset of said set of items of goods.

?b crybib,nftcore
28jul00 14:06:29 User243016 Session D75.4
SYSTEM:OS - DIALOG OneSearch
File 2:INSPEC 1969-2000/Jun W3
(c) 2000 Institution of Electrical Engineers
***File 2: There is no data missing. UDs are being adjusted to reflect the current months data.**
File 6:NTIS 1964-2000/Aug W3
Comp&distr 2000 NTIS, Intl Cpyrht All Right
***File 6: See HELP CODES6 for a short list of the Subject Heading Codes (SC=, SH=) used in NTIS.**
File 8:Ei Compendex(R) 1970-2000/Jul W1
(c) 2000 Engineering Info. Inc.
File 34:SciSearch(R) Cited Ref Sci 1990-2000/Jul W4
(c) 2000 Inst for Sci Info
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
(c) 1998 Inst for Sci Info
File 35:DISSERTATION ABSTRACTS ONLINE 1861-1999/DEC
(c) 2000 UMI
***File 35: Is currently not updating. We expect the updates to resume in late July, 2000.**
File 62:SPIN(R) 1975-2000/May W3
(c) 2000 American Institute of Physics
File 65:Inside Conferences 1993-2000/Jul W4
(c) 2000 BLDSC all rts. reserv.
File 77:Conference Papers Index 1973-2000/May
(c) 2000 Cambridge Sci Abs
File 99:Wilson Appl. Sci & Tech Abs 1983-2000/Jun
(c) 2000 The HW Wilson Co.
File 144:Pascal 1973-2000/Jul W4
(c) 2000 INIST/CNRS
***File 144: This file is updating weekly now.**
File 94:JICST-EPlus 1985-2000/Mar W4
(c) 2000 Japan Science and Tech Corp(JST)
File 233:Internet & Personal Comp. Abs. 1981-2000/Jul
(c) 2000 Info. Today Inc.
File 238:Abs. in New Tech & Eng. 1981-2000/Jul
(c) 2000 Reed-Elsevier (UK) Ltd.
File 266:FEDRIP 2000/Jul
Comp & dist by NTIS, Intl Copyright All Rights Res
File 583:Gale Group Globalbase(TM) 1986-2000/Jul 28
(c) 2000 The Gale Group
File 473:Financial Times Abstracts 1998-2000/Jul 27
(c) 2000 The New York Times
File 474:New York Times Abs 1969-2000/Jul 27
(c) 2000 The New York Times
File 475:Wall Street Journal Abs 1973-2000/Jul 27
(c) 2000 The New York Times
File 347:JAPIO Oct 1976-2000/Feb(UPDATED 000727)
(c) 2000 JPO & JAPIO
***File 347: Update 2/2000 is delayed. See important announcement from JAPIO in HELP NEWS 347.**
File 278:Microcomputer Software Guide 2000/Jul
(c) 2000 Reed Elsevier Inc.
File 256:SoftBase:Reviews,Companies&Prods. 85-2000/Jun
(c)2000 Info.Sources Inc

Set Items Description

--- -----

?s (electronic? or digital)(2w) (cash or money)

Processing

Processed 20 of 22 files ...

Completed processing all files

3483579 ELECTRONIC?

1088958 DIGITAL

88159 CASH

155030 MONEY

S1 4148 (ELECTRONIC? OR DIGITAL)(2W) (CASH OR MONEY)

?s (transact? or buy? or **l**l? or purchas?) (2n) (history or log? or file)
Processed 10 of 22 files ...
Processing
Completed processing all files
108567 TRANSACT?
238205 BUY?
243165 SELL?
216145 PURCHAS?
697650 HISTORY
990935 LOG?
191878 FILE
S2 2854 (TRANSACT? OR BUY? OR SELL? OR PURCHAS?) (2N) (HISTORY OR
LOG? OR FILE)

?s s1 and s2
4148 S1
2854 S2
S3 20 S1 AND S2

?s s3 not py>1995
>>>One or more prefixes are unsupported
>>> or undefined in one or more files.
Processed 10 of 22 files ...

Processing
Completed processing all files
20 S3
15731554 PY>1995
S4 7 S3 NOT PY>1995

?rd
>>>Duplicate detection is not supported for File 347.
>>>Duplicate detection is not supported for File 278.

>>>Records from unsupported files will be retained in the RD set.
...completed examining records

S5 7 RD (unique items) SCANNED HITS

?t s5/3,k/1-7

>>>KWIC option is not available in file(s): 77, 278

5/3,K/1 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)
(c) 2000 Engineering Info. Inc. All rts. reserv.

01537317 E.I. Monthly No: EI8407062594 E.I. Yearly No: EI84013401

Title: FULL-ROLL SECURE JOURNAL TAKE-UP MECHANISM.

Author: Harris, R. H.

Source: IBM Technical Disclosure Bulletin v 26 n 8 Jan 1984 p 4190-4191

Publication Year: 1984

CODEN: IBMTAA ISSN: 0018-8689

Language: ENGLISH

Abstract: For point-of-sale terminals or electronic cash registers and the like, a paper journal roll tape is normally printed with a chronological log of all transactions . The journal is required for security to detect pilferage from the cash drawer and as...

5/3,K/2 (Item 1 from file: 347)
DIALOG(R)File 347:JAPIO
(c) 2000 JPO & JAPIO. All rts. reserv.

04780772 **Image available**
MERCHANDISE SALE DATA PROCESSOR

PUB. NO.: 07-073372 [JP 7073372 A]
PUBLISHED: March 17, 1995 (19950317)
INVENTOR(s): KATO MASATO
APPLICANT(s): TEC CORP [000356] (A Japanese Company or Corporation), JP
(Japan)
APPL. NO.: 05-217820 [JP 93217820]
FILED: September 02, 1993 (19930902)

ABSTRACT

...CONSTITUTION: At an **electronic cash** register 1, a purchase setting means to set the merchandise data of purchased merchandise in...

... price of purchase by automatically registering the merchandise data to be set to the merchandise **file** with the **purchase** setting means such as the CPU 2 is formed by the CPU 2 and the like. Thus, in the state of subtracting the price of purchase, the **electronic cash** register 1 is turned to the state of registering the merchandise data of the purchased...

5/3,K/3 (Item 2 from file: 347)
DIALOG(R)File 347:JAPIO
(c) 2000 JPO & JAPIO. All rts. reserv.

04595069 **Image available**
ELECTRONIC CASH REGISTER

PUB. NO.: 06-266969 [JP 6266969 A]
PUBLISHED: September 22, 1994 (19940922)
INVENTOR(s): HASEGAWA SHINJI
APPLICANT(s): TOKYO ELECTRIC CO LTD [000356] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 05-050597 [JP 9350597]
FILED: March 11, 1993 (19930311)
JOURNAL: Section: P, Section No. 1848, Vol. 18, No. 685, Pg. 4, December 22, 1994 (19941222)

ELECTRONIC CASH REGISTER

ABSTRACT

PURPOSE: To immediately judge a printing range by the cashiers or time zones for **transaction history** by performing prescribed partitioned printing on journal paper when the information of a partitioning object...

... of a cashier under operating at present is registered on a RAM 14 of this **electronic cash** register and the RAM 14 is provided with the respective memory areas of a present...

5/3,K/4 (Item 3 from file: 347)
DIALOG(R)File 347:JAPIO
(c) 2000 JPO & JAPIO. All rts. reserv.

04432263 **Image available**
ELECTRONIC CASH REGISTER

PUB. NO.: 06-076163 [JP 6076163 A]
PUBLISHED: March 18, 1994 (19940318)
INVENTOR(s): ITO SEIJI
APPLICANT(s): SHARP CORP [000504] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 04-036338 [JP 9236338]
FILED: February 24, 1992 (19920224)
JOURNAL: Section: P, Section No. 1758, Vol. 18, No. 330, Pg. 50, June 22, 1994 (19940622)

ELECTRONIC CASH REGISTER

ABSTRACT

... is added on total sales aggregate in the total sales record R2 of a clerk **transaction file** F2, and a result is updated and stored in the total sales record R2, and...

...group number in a sales record R3 classified by every goods group in the clerk **transaction file** F2, and the result is updated and stored in the sales record R3 classified by...

5/3,K/5 (Item 4 from file: 347)
DIALOG(R)File 347:JAPIO
(c) 2000 JPO & JAPIO. All rts. reserv.

04159758 **Image available**
ELECTRONIC CASH REGISTER

PUB. NO.: 05-151458 [JP 5151458 A]
PUBLISHED: June 18, 1993 (19930618)
INVENTOR(s): WAKABAYASHI KENICHI
GOTO KAZUYUKI
APPLICANT(s): SHARP CORP [000504] (A Japanese Company or Corporation), JP
(Japan)
APPL. NO.: 03-314954 [JP 91314954]
FILED: November 28, 1991 (19911128)
JOURNAL: Section: P, Section No. 1624, Vol. 17, No. 550, Pg. 2,
October 04, 1993 (19931004)

ELECTRONIC CASH REGISTER

ABSTRACT

PURPOSE: To provide an **electronic cash register** which always sells commodities by the amount of money determined due to a sale...

... by an input part 28, this number is temporarily stored as data in a loose **selling file** 27. When loose commodities out of the same packed commodities are additionally inputted thereafter, the number of them is stored in the loose **selling file** 27, and first stored data and the additionally inputted number are counted; and if the...

5/3,K/6 (Item 5 from file: 347)
DIALOG(R)File 347:JAPIO
(c) 2000 JPO & JAPIO. All rts. reserv.

03733394 **Image available**
ELECTRONIC CASH REGISTER

PUB. NO.: 04-098494 [JP 4098494 A]
PUBLISHED: March 31, 1992 (19920331)
INVENTOR(s): MOMOSE SATOKO
APPLICANT(s): MATSUSHITA ELECTRIC IND CO LTD [000582] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 02-213946 [JP 90213946]
FILED: August 13, 1990 (19900813)
JOURNAL: Section: P, Section No. 1389, Vol. 16, No. 333, Pg. 41, July 20, 1992 (19920720)

ELECTRONIC CASH REGISTER

ABSTRACT

...is stored in any applicable area of separate file areas 2 to 4 in a **transaction file** 1 according to the decision by an input device 6. Then the total amount of...

5/3,K/7 (Item 6 from file: 347)
DIALOG(R)File 347:JAPIO
(c) 2000 JPO & JAPIO. All rts. reserv.

03005992 **Image available**
TRANSACTION DATA STORAGE SYSTEM FOR ELECTRONIC CASH REGISTER

PUB. NO.: 01-303592 [JP 1303592 A]
PUBLISHED: December 07, 1989 (19891207)
INVENTOR(s): SHIRASAKI TAKASHI

APPLICANT(s): SHARP CORP [00504] (A Japanese Company or Corporation), JP
(Japan)

APPL. NO.: 63-135047 [JP 88135047]

FILED: May 31, 1988 (19880531)

JOURNAL: Section: P, Section No. 1011, Vol. 14, No. 98, Pg. 89,
February 22, 1990 (19900222)

TRANSACTION DATA STORAGE SYSTEM FOR ELECTRONIC CASH REGISTER

ABSTRACT

...as to various data inputted from a key input part 8 is set and a transaction file 18 for storing a series of transaction data in order is set. When transaction data by sections set previously for articles to be dealt with are stored in the electronic cash register at each time of dealing, the transaction data which belong to the predetermined specific...
... are prevented from being stored. Consequently, undesirable transaction data need not be stored in the electronic cash register and the transmission time of the stored transaction data is shortened.

FILE 'USPATFULL' ENTERED AT 15:09:03 ON 28 JUL 2000
CA INDEXING COPYRIGHT (C) 2000 AMERICAN CHEMICAL SOCIETY (ACS)

=> s (electronic? or digital)(2w) (cash or money) or ecash

376882 ELECTRONIC?
266262 DIGITAL
8416 CASH
16967 MONEY
1031 (ELECTRONIC? OR DIGITAL) (2W) (CASH OR MONEY)
11 ECASH
L1 1031 (ELECTRONIC? OR DIGITAL) (2W) (CASH OR MONEY) OR ECASH

=> s (transact? or buy? or sell? purchas?) (2w) (history or log? or file)

39281 TRANSACT?
18757 BUY?
15958 SELL?
73390 PURCHAS?
13 SELL? PURCHAS?
(SELL? (W) PURCHAS?)
35754 HISTORY
298886 LOG?
59618 FILE
L2 1357 (TRANSACT? OR BUY? OR SELL? PURCHAS?) (2W) (HISTORY OR LOG? OR
FILE)

=> s (transact? or buy? or sell? or purchas?) (2w) (history or log? or file)

39281 TRANSACT?
18757 BUY?
15958 SELL?
73390 PURCHAS?
35754 HISTORY
298886 LOG?
59618 FILE
L3 1534 (TRANSACT? OR BUY? OR SELL? OR PURCHAS?) (2W) (HISTORY OR LOG?
OR
FILE)

=> s 11(p)13

L4 20 L1(P)L3 SCANNED HITS

=> d 14 kwic,ti,pn 1-20

L4 ANSWER 1 OF 20 USPATFULL

DETD If credit logs of plural kinds of **electronic money**
(currency) are stored as the credit log information in the memory 21 of
the IC card 20 as shown in. . . 12(a), the MPU 12 displays the first
cireedit log of currency displayed on the display unit 11 when the
credit

transaction history displaying function is selected.

DETD If debit logs of plural kinds of **electronic money**
(currency) are stored as the debit log information in the memory 21 of
the IC card 20, the first debit log of currency displayed on the
display

unit 11 when the credit transaction history displaying function is selected is displayed as the initial display on the display unit 11.

TI Card unit processing apparatus
PI US 6070794 20000606

L4 ANSWER 2 OF 20 USPATFULL

DETD The electronic money storing apparatus 6 is further provided with sensors 31 for detecting temperature and vibration, a file

device 32 for maintaining a transaction record file, a display device 33 for displaying alarm during the operation and a message such as a command to exchange the. . .

TI Electronic money storing apparatus and IC card control method
PI US 6032858 20000307

L4 ANSWER 3 OF 20 USPATFULL

SUMM A feature of the present invention resides in an electronic cashless system comprising a cashless medium or electronic money for memorizing amount information and for performing an operation of amount information, an automatic transaction terminal device having a reading/writing. . . information and at least a non-settled fund file means for storing amount information written by the cashless medium and a seller ledger file means for identifying the account balance of the multiple seller's accounts and for storing amount information.

TI Cashless medium for an electronic cashless system
PI US 6003767 19991221

L4 ANSWER 4 OF 20 USPATFULL

SUMM A feature of the present invention resides in an electronic cashless system comprising a cashless medium or electronic money for memorizing amount information and for performing an operation of amount information, an automatic transaction terminal device having a reading/writing. . . information and at least a non-settled fund file means for storing amount information written by the cashless medium and a seller ledger file means for identifying the account balance of the multiple seller's accounts and for storing amount information.

TI Transaction terminal for an electronic cashless system
PI US 6003762 19991221

L4 ANSWER 5 OF 20 USPATFULL

SUMM . . . the first subscriber for verification of the second exchange data. In a first transfer, the first money module transfers first electronic representations of money to the second money module via the cryptographically secure session, wherein each of the first electronic representations of money have a monetary unit identifier, and wherein the first electronic representations of money are in the amounts and in the monetary units specified by the first exchange data. In a second transfer, the second money module transferring second electronic representations of money to the first money module via the cryptographically secure session; wherein each of the second electronic representations of money have a monetary unit identifier, and wherein the second electronic representations of money are in the amounts and in the monetary units specified by the second exchange data. The first and second money modules each unconditionally updating a transaction log to separately finalize the first transfer and the second transfer.

CLM What is claimed is:
. . . plurality of processor-based multilateral settlement agents (MSAs); and a plurality of processor-based counterparty settlement agents (CSAs); wherein said CSAs store electronic money and have a protocol to transfer electronic money to said

MSAs when having a net debit position, and to receive **electronic money** from said CSAs when having a net credit position, and where said CSAs maintain a **transaction log** to record **electronic money** transfers; wherein said MSAs store **electronic money** and have a protocol to receive **electronic money** from net debit CSAs and to transfer **electronic money** to said MSC, and to receive **electronic money** from said MSC and to transfer **electronic money** to net credit CSAs, and where said MSAs maintain a **transaction log** to record **electronic money** transfers; and wherein said MSC stores **electronic money** and has a protocol to receive **electronic money** from MSAs that were paid by said net debit CSAs, and to transfer **electronic money** to MSAs for said net credit CSAs, and where said MSC maintains a **transaction log** to record **electronic money** transfers.

TI Foreign exchange transaction system
PI US 5978485 19991102

L4 ANSWER 6 OF 20 USPATFULL

SUMM A feature of the present invention resides in an electronic cashless system comprising a cashless medium or **electronic money** for memorizing amount information and for performing an operation of amount information, an automatic transaction terminal device having a reading/writing. . . information and at least a non-settled fund file means for storing amount information written by the cashless medium and a **seller ledger file** means for identifying the account balance of the multiple seller's accounts and for storing amount information.

TI Electronic cashless system
PI US 5949043 19990907

L4 ANSWER 7 OF 20 USPATFULL

CLM What is claimed is:

17. The payment method according to claim 3, wherein said first money module updates its **transaction log** to indicate its transfer of said **electronic representation of money** is not provisional with respect to said first money module.
19. The payment method according to claim 3, wherein said second money module updates its **transaction log** to indicate its retention of said **electronic representation of money** is not provisional.

TI Electronic-monetary system
PI US 5920629 19990706

L4 ANSWER 8 OF 20 USPATFULL

DETD . . . by decentralized processing of a plurality of reliable institutions (trustees) by which, when a user makes an attack on the **electronic cash** system, such as a counterfeit or double spending of the **electronic cash**, the attacker can be specified from his **transaction history** with the cooperation of all the trustees under the authorization of a court, for instance. However, this system is helpless. . .

TI Electronic cash implementing method using a trustee
PI US 5901229 19990504

L4 ANSWER 9 OF 20 USPATFULL

SUMM . . . biometric or PIN authentication information, smart cards may also store phone numbers, frequent flyer miles, coupons obtained from stores, a **transaction history**, **electronic cash** usable at tollbooths and on public transit systems, as well as the buyer's name, vital statistics, and perhaps even medical. . .

TI Tokenless biometric transaction authorization method and system

PI US 5870723 19990209

L4 ANSWER 10 OF 20 USPATFULL

SUMM . . . credit and debit account numbers, smart cards may also store phone numbers, frequent flyer miles, coupons obtained from stores, a **transaction history, electronic cash** usable at tollbooths and on public transit systems, as well as the customer's name, vital statistics, and perhaps even medical. . .

TI Tokenless biometric transaction authorization system

PI US 5838812 19981117

L4 ANSWER 11 OF 20 USPATFULL

SUMM . . . credit and debit account numbers, smart cards may also store phone numbers, frequent flyer miles, coupons obtained from stores, a **transaction history, electronic cash** usable at tollbooths and on public transit systems, as well as the customer's name, vital statistics, and perhaps even medical. . .

TI Tokenless identification of individuals

PI US 5805719 19980908

L4 ANSWER 12 OF 20 USPATFULL

SUMM . . . credit and debit account numbers, smart cards may also store phone numbers, frequent flyer miles, coupons obtained from stores, a **transaction history, electronic cash** usable at tollbooths and on public transit systems, as well as the customer's name, vital statistics, and perhaps even medical. . .

TI Use sensitive identification system

PI US 5802199 19980901

L4 ANSWER 13 OF 20 USPATFULL

SUMM . . . the first subscriber for verification of the second exchange data. In a first transfer, the first money module transfers first **electronic representations of money** to the second money module via the cryptographically secure session, wherein each of the first **electronic representations of money** have a monetary unit identifier, and wherein the first **electronic representations of money** are in the amounts and in the monetary units specified by the first exchange data. In a second transfer, the second money module transferring second **electronic representations of money** to the first money module via the cryptographically secure session, wherein each of the second **electronic representations of money** have a monetary unit identifier, and wherein the second **electronic representations of money** are in the amounts and in the monetary units specified by the second exchange data. The first and second money modules each unconditionally updating a **transaction log** to separately finalize the first transfer and the second transfer.

CLM What is claimed is:

(h) first subscriber for verification of said second exchange data; (i) in a first transfer, said first money module transferring first **electronic representations of money** to said second money module via said cryptographically secure session, wherein each of said first **electronic representations of money** have a monetary unit identifier, and wherein said first **electronic representations of money** are in said amounts and in said monetary units specified by said first exchange data; (j) in a second transfer, said second money module transferring second **electronic representations of money** to said first money module via said cryptographically secure session, wherein each of said second **electronic representations of money** have a monetary unit identifier, and wherein said second **electronic representations of money** are in said amounts and in said monetary units specified by said second exchange data; and (k) said first and second money modules each unconditionally updating a **transaction log** to separately finalize said first

transfer and said second transfer.

TI Foreign exchange transaction system
PI US 5774553 19980630

L4 ANSWER 14 OF 20 USPATFULL

SUMM . . . and biometric or PIN authentication information, smartcards

may also store phone numbers, frequent flyer miles, coupons obtained from stores, a **transaction history**, **electronic cash** usable at tollbooths and on public transit systems, as well as the customer's name, vital statistics, and perhaps even medical. . .

TI Tokenless biometric ATM access system

PI US 5764789 19980609

L4 ANSWER 15 OF 20 USPATFULL

AB . . . non-contact, and transmission and reception of data between the

vending and refunding device and the storage device are executed by **electronic money** and an electronic ticket which are electronically signed, and a trouble of sending and receiving of an electronic ticket and **electronic money** is prevented by recording the **transaction history** as required.

SUMM . . . least a ticket production means for producing a ticket, a ticket transmission and reception means for transmitting or receiving an

electronic ticket, a **money** transmission and reception means for transmitting or receiving **electronic money**, a **money** storage means for storing **electronic money**, a **transaction history** storage means for storing a **transaction history**, and an encryption key storage means for storing an encryption key.

SUMM Furthermore, it is desirable that the electronic ticket storage device comprises at least an electronic ticket storage means and an **electronic money** storage means for storing an electronic ticket and **electronic money** respectively, a **transaction history** storage means, an I/O interface with the outside, and a microprocessor which is set so as to control transmission and reception of an electronic ticket and **electronic money** and storage the history thereof.

SUMM To prevent an I/O history of an electronic ticket and **electronic money** from alteration, it is desirable that the aforementioned microprocessor of the electronic ticket storage device is set so that an

item relating to the aforementioned electronic ticket cannot be deleted from the **transaction history** storage means until the electronic ticket stored in the electronic ticket storage means is deleted.

SUMM . . . a sending command to the electronic ticket storage device via the terminal device. To prevent forgery or illegal reproduction of **electronic money** due to interception of the communication content of the **electronic money**, it is possible to use the sending procedure using the encryption art described

in Published Unexamined Patent Application 5-504643 of the prior art. When the electronic ticket storage device sends the **electronic money** and then receives confirmation of reception of the **electronic money** from the electronic ticket vending and refunding device, the electronic ticket storage device records the ID of the opposite of sending (identifier), sent money, and completion of sending in the I/O history of electronic tickets and **electronic money**, that is, the **transaction history**.

SUMM . . . the electronic ticket vending and refunding device connected via the communication line. The encryption process for an electronic

ticket and **electronic money** which is executed for communication with the electronic ticket vending and refunding device can prevent forgery and illegal reproduction of an electronic ticket and

electronic money and alteration of a **transaction history** by concealing the encryption process by allowing the electronic ticket storage device to execute it. As a result, the **transaction history** can increase the proving ability for transfer of an electronic ticket and **electronic money**.

SUMM On the other hand, the electronic ticket vending and refunding device receiving the electronic ticket records in the **transaction history** storage means of the electronic ticket vending and refunding device that it receives the electronic ticket. Next, the electronic ticket is valid, it calculates the refund from the ticket cost and the ticket refunding commission and sends **electronic money** equal to the refund to the terminal device. If this occurs, the electronic ticket vending and refunding device records sending of the **electronic money** and the amount thereof in the **transaction history** storage means of the electronic ticket vending and refunding device.

SUMM When the electronic storage device receives the **electronic money** sent from the electronic ticket vending and refunding device via the terminal device, it accumulates the sent **electronic money** to the amount of money stored in the electronic ticket storage means and records reception of the **electronic money** and the amount thereof in the **transaction history** of the electronic ticket storage device and then deletes the electronic ticket to be refunded. If there is an area. . . deletable state. As a method thereof, there is a method for providing a deletable flag for each item in the **transaction history** and turning the deletable flag ON when it becomes deletable. The invalid flag is turned OFF when the item in the **transaction history** corresponding to the deletable flag is deleted. By doing this, the **transaction history** cannot be deleted while an electronic ticket exists in the electronic ticket storage means, so that a trouble due to alteration of the **transaction history** can be prevented. When transaction histories are accumulated up to the storage capacity, it is desirable to delete deletable histories. . .

DETD . . . a ticket information file 16 for storing information on whether tickets can be vended and the ticket price and a **transaction history file** 17 for recording a history when **electronic money** and an electronic ticket are transmitted to or received from the electronic ticket storage devices 2 is connected via a. . . 1 has a built-in large capacity storage device, it is desirable to store the ticket information file 16 and the **transaction history file** 17 in it. As shown in FIG. 2, the storage device 11 comprises an **electronic money** storage area 12, an area 13 for storing an encryption key used to sign ticket information data electronically, an area. . .

DETD . . . program stored in the storage unit 31. Furthermore, the storage unit 31 comprises an electronic ticket storage area 32, an **electronic money** storage area 33, a program storage area 34, a **transaction history** storage area 35 for storing records of transmission and reception of an electronic ticket and **electronic money**, and a working area 36.

DETD When the electronic ticket vending and refunding device 1 receives the **electronic money** of 7400 yen from the electronic ticket storage device 2 (Step 300), it checks for the validity of the received **electronic money**, accumulates 7400 yen in the electronic ticket storage area 12 (Step 310), and registers, for

example, "Transaction No. 345123, 7400 yen is received" in the transaction history file 17 (Step 320). FIG.

7 shows an example of the content of the transaction history file 17 of the electronic ticket vending and refunding device 1. Transaction history data 650 of the transaction history file 17 comprises "transaction #" data indicating the transaction sequence number, "object" data indicating money or a ticket, "sent/received" data indicating. . . whether an object is sent or received, "content"

data

indicating the amount of money or the content of a the transaction history can be deleted or not.

DETD Next, the electronic ticket vending and refunding device 1 sends a notification of acknowledgment of reception of electronic money (Step 330). When the CPU 38 of the electronic ticket storage device 2 receives the notification of reception of electronic money from the electronic ticket vending and refunding device 1 via the terminal device 3 (Step 340), the CPU 38 registers "7400 yen is sent for professional baseball A" in the transaction history storage area 35. Professional baseball A is ID of the electronic ticket vending and refunding device

1

(Step 350). FIG. 8 shows the content of the transaction history storage area 35. Transaction history storage data 630 in the transaction history storage area 35 comprises ID of an opposite of communication, "object" data indicating money or a ticket, "sent/received" data indicating. . . "content" data indicating the amount of money or the content of a ticket, and "deletable flag" data indicating whether the transaction history can be deleted or not.

DETD . . . data flowing the telephone line is intercepted, the electronic ticket will not be forged or illegally reproduced. Furthermore, if the transaction history of an electronic ticket and electronic money is stored, a trouble on transmission and reception of the electronic money and electronic ticket can be prevented. In this embodiment, by using a microprocessor (CPU) in which a program is set so that an electronic ticket and electronic money are mounted in one device (IC chip) and the transaction history when the electronic ticket and electronic money are actually sent or received and the transaction history which is applicable only after the electronic ticket is deleted are updated, the transaction history can be prevented from alteration.

DETD . . . 2 calculates the refund in consideration of the amount of money. When the electronic ticket storage device 2 receives the electronic money (Step 1130) via the terminal device (Step 1120), the electronic ticket storage device 2 accumulates the amount of electronic money in the electronic money storage area 33 (Step 1140). The electronic ticket storage device 2 registers reception of the electronic money in the transaction history storage device 35 (Step 1150). When there exists a deletable flag area in the transaction history storage area 35, the deletable flag corresponding to the transaction history concerned in vending and purchasing of the refunded ticket is turned

ON.

DETD Furthermore, by storing both electronic money and an electronic ticket in a single electronic ticket storage device and controlling sending and reception thereof and the sending and reception history thereof by the microprocessor of the electronic ticket storage device, a transaction history having a high evidence ability which cannot be altered easily can be realized.

CLM What is claimed is:

. . . generating an electronic ticket and executing at least one of vending and refunding by exchanging the generated electronic ticket with

electronic money; a communication line connected to said vending means; at least one terminal means connected to said communication line for executing . . . refunding of an electronic ticket; and electronic ticket storage means having means for electronically connecting said terminal means for storing **electronic money**, means for storing an electronic ticket, and means for storing a **transaction history** including transactions of **electronic money** and electronic tickets, updated by a program stored in said electronic ticket storage means, at a transaction of at least one of **electronic money** and an electronic ticket; wherein by a request of one of purchasing and refunding of an electronic ticket by at . . . one of said terminal means and said electronic ticket storage means, at least one of said electronic ticket and said **electronic money** is sent from said electronic ticket vending means via said communication line.

. . . transmission and reception means for transmitting or receiving an electronic ticket; money transmission and reception means for transmitting or receiving **electronic money**; money storage means for storing **electronic money**; **transaction history** storage means for storing a history, hereinafter referred to as a **transaction history**, of transmitting or receiving at least one of **electronic money** and an electronic ticket; and encryption key storage means for storing an encryption key.

. . . means for electronically connecting said terminal means; and a microprocessor for controlling transmission and reception of an electronic ticket and **electronic money**, and storage of said **transaction history**.

TI Electronic ticket vending system and method thereof!
PI US 5754654 19980519

L4 ANSWER 16 OF 20 USPATFULL

SUMM A feature of the present invention resides in an electronic cashless system comprising a cashless medium or **electronic money** for memorizing amount information and for performing an operation of amount information, an automatic transaction terminal device having a reading/writing. . . information and at least a non-settled fund file means for storing amount information written by the cashless medium and a **seller ledger file** means for identifying the account balance of the multiple seller's accounts and for storing amount information.

TI Electronic cashless system
PI US 5644118 19970701

L4 ANSWER 17 OF 20 USPATFULL

SUMM . . . credit and debit account numbers, smart cards may also store phone numbers, frequent flyer miles, coupons obtained from stores, a **transaction history**, **electronic cash** usable at tollbooths and on public transit systems, as well as the customer's name, vital statistics, and perhaps even medical. . .

TI Tokenless identification system for authorization of electronic transactions and electronic transmissions

PI US 5613012 19970318

L4 ANSWER 18 OF 20 USPATFULL

CLM What is claimed is:

. . . Ready-To-Commit message to said first money module via said second cryptographically secure session; said first money module updating a first **transaction log** and informing said customer trusted agent of successful **electronic money** transfer; and said second money module updating a second

transaction log and securely informing said merchant
trusted agent [REDACTED] successful **electronic money** [REDACTED]
receipt.

TI Trusted agents for open electronic commerce!
PI US 5557518 19960917

L4 ANSWER 19 OF 20 USPATFULL

SUMM Retail stores such as supermarkets generally have one or more checkout lanes, each of which is equipped with an **electronic cash register** operated by a cashier. Although there are variations, the cashier typically operates a keyboard and/or scanner to log into. . . memory the identity or price of each item presented for purchase by the customer, who simply waits. To complete the **transaction**, the cashier logs the amount presented by the customer, makes change from a cash drawer, and provides the customer with a receipt. In. . .

TI Integrated automated retail checkout terminal
PI US 5494136 19960227

L4 ANSWER 20 OF 20 USPATFULL

SUMM . . . acceptability of the transaction, and means for printing data relating to the transaction when the transaction is acceptable. The outstanding **transaction file** stores the required items of data included in the card data and the sum of the transaction received from the transaction terminal. An **electronic cash register** is usable as the transaction terminal when additionally provided with a card reader and means for performing communications with. . . because the register already has a keyboard,

display and printer. Since commercial transactions are handled usually with the use of **electronic cash registers**, the use of the register also as the transaction terminal assures convenience in handling transactions, while the total sum. . .

TI System for making payments for transactions
PI US 4673802 19870616